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AUTHOR	Gerken, Jeffrey T.; Volkwein, J. Fredericks
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ABSTRACT

This study examined 12 educational outcomes for a group of undergraduate students who began their freshman year in fall 1990. Data came from: the 1990 Entering Student Survey (student characteristics, academic skills, study habits and plans); the 1990-91 Freshman Outcomes Survey (family support, study habits, faculty/staff contact, social and classroom experiences, academic plans, academic/personal growth, and school satisfaction); and the 1998 Student Information Records System (grade point average, credits, departure status, and degree obtained). Data were combined to explore relationships among pre-college characteristics, freshman year experiences, freshman year outcomes, and long-term educational outcomes, including self-reported growth and objective performance records. Researchers developed intellectual, personal, and overall growth measures from lists of specific skills self-reported by students concerning their own growth at the university. The study investigated what led to positive outcomes in the freshman year and which of the pre-college and freshman year variables were most influential in predicting longer-term outcomes assessed by the 8-year college history. Results indicated that freshman college experiences were better predictors of outcome than were pre-college characteristics. Classroom experiences, faculty relations, and peer relations were the most influential predictors of subsequent outcomes. (Contains 9 references.) (SM)

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Center for the Study of Higher Education

The Pennsylvania State University
403 South Allen Street, Suite 104
University Park, PA 16801-5252

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Pre-College Characteristics and Freshman Year Experiences as Predictors of 8-year College Outcomes

Jeffrey T. Gerken
Assistant for Institutional Research
University at Albany
<jgerken@uamail.albany.edu>

J. Fredericks Volkwein
Director and Professor
Center for the Study of Higher Education
Penn State University
<volkwein@psu.edu>

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Abstract

This investigation examines twelve educational outcomes for a representative group of undergraduate students who began their freshman year in Fall 1990. Looking at these students in 1998, the study explores the association among pre-college characteristics, freshman year experiences, freshman year outcomes, and their cumulative 8-year college academic history. Results indicate that freshman college experiences are better predictors of all twelve outcomes than are the pre-college characteristics. In general, classroom experiences, faculty relations, and peer relations are the most influential predictors of subsequent outcomes.

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Pre-College Characteristics and Freshman Year Experiences as Predictors of 8-year Academic Outcomes

Introduction

This study is a continuation of previous outcomes research that has examined student outcomes such as intellectual growth, personal growth, satisfaction, persistence, and GPA. In this present analysis we combine data from the 1990 Entering Student Survey, the 1990-91 Freshman Outcomes Study, and the 1998 Student Information Records System. We then examine the associations among the pre-college characteristics, freshman year experiences, and long-term educational outcomes, including self-reported growth and objective performance records.

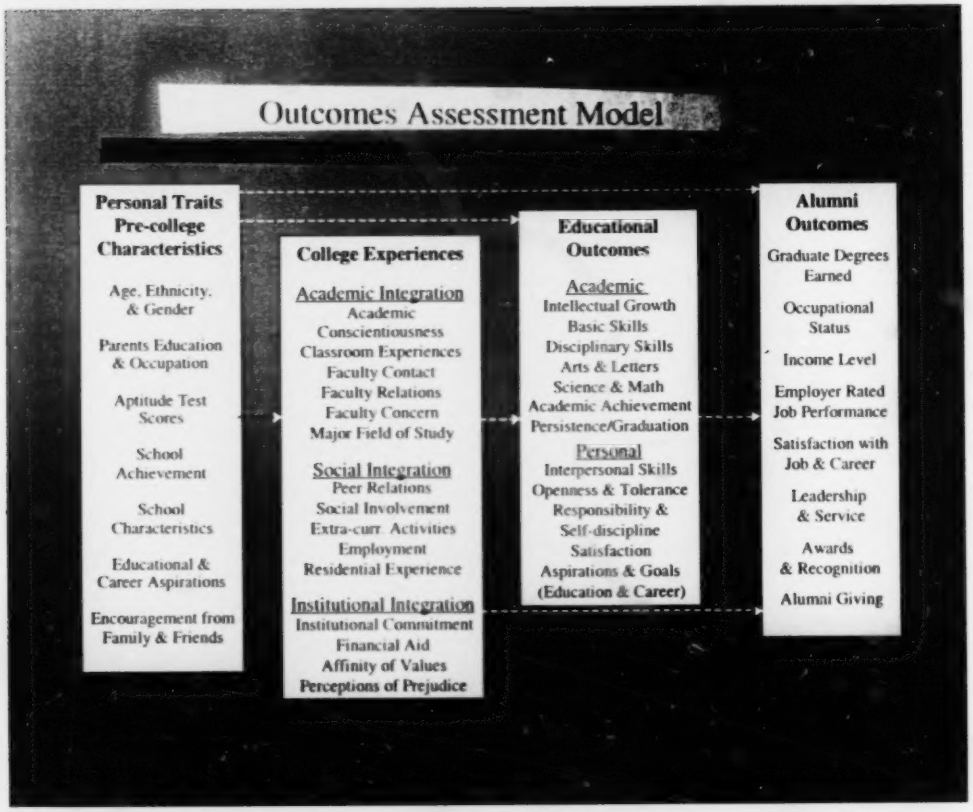
The Outcomes Assessment Model used at this university was developed over the years and draws upon the concepts and constructs in several other models discussed in the institutional research literature. The Office of Institutional Research regularly collects information that reflects the concepts in the model including an array of student personal traits, pre-college characteristics, and college experiences. Concepts concerning college experiences include student academic, social, and institutional integration, as well as academic and personal outcomes.

Using the model as a guide, we developed intellectual, personal, and overall growth measures from lists of specific skills self-reported by students concerning their own growth at the university on a 5-point scale. These growth measures, along with the other measures, form multi-item scales constructed by using a statistical reliability analysis which assesses how well each individual item fits in the particular scale or measurement.

This study looks at the factors influencing student outcomes measures but this time we focus on the freshman year as a predictor of subsequent multi-year outcomes. It is generally regarded that the freshman year is the most crucial in the typical student's academic career. Positive outcomes in the freshman year should be associated with positive educational outcomes such as those represented here by the 8-year college history.

The main question raised here is, what leads to positive outcomes in the Freshman year? Is it the pre-college characteristics that new students arrive at the University at Albany with? Is it the peer relationships that are established once students are here? Is it the faculty relations and classroom experiences while at college? Is it the effort students, themselves, put forth? The answer, we believe, can to some degree be found by studying the statistical relationships between the various pre-college characteristics, freshman year experiences, and desired growth and performance outcomes.

The second question is, which of these various pre-college and freshman year variables are most influential in predicting the more long term outcomes assessed here by the 8-year college history?



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Data and Methods

Pre-college Variables

The 1990 Entering Student Survey was administered during summer registration to traditional freshmen entering the University in Fall 1990. The survey was developed over the years and it asks students about family socio-economic level, high school preparation, personal and academic interests, social concerns, academic skills, study habits, and future plans. Students respond to these questions on a 5-point Likert scale.

In addition to the 1990 Entering Student Survey data, information about the students' age, race, sex, high school GPA, and SAT scores is available from the Student Information Records System. Together, these two data sources give a picture of student pre-college characteristics.

Freshman Year Variables

The 1990-91 Freshman Outcomes Survey was also developed over the years. It was administered to freshmen in the Spring of 1991. The survey asks questions about family support, study habits, faculty and staff contact, social experiences, classroom experiences, academic plans, academic growth, personal growth, and satisfaction with the University. Student responses to these questions are also measured on a 5-point Likert scale and give a representation of freshman year experiences. The responses from the 1990 Freshman Cohort Study are linked by social security number to the student responses in the 1990 Entering Study Survey.

8-Year College Outcomes

Below is a brief description of the growth items from the 1990-91 Freshman Outcomes Survey and the 8-year performance outcomes from the Student Information Records System.

Intellectual growth items measure growth in the following areas:

Arts & Letters
Important literature, historical context, creative expression, original ideas, intellectual curiosity, and writing effectively.

Scientific Method
Problem solving, analytical thinking, scientific findings, mathematical concepts, and evaluating methods.

Disciplinary Skills
Schools, of thought, general principles, inter-relatedness of fields of study, synthesizing information, particular research methods, learning, and factual knowledge.

Personal growth items measure growth in the following areas:

Interpersonal Skills
Coping with conflict, team member, participation in democratic society, social skills, social situations, and speaking effectively.

Openness & Tolerance
Moral issues, cultural differences, new ideas, different races, understanding one's self, and new intellectual areas.

Responsibility & Self Control
Personal responsibility, self-discipline, and functioning independently.

Overall growth items measure growth in the following areas:

Goal Clarity
Clear goals, career plans, future intellectual and personal growth, academic achievement orientation, independent learning, career skills, future preparation, and graduate/professional school preparation.

Attend Albany Again
A single bottom line question asking students if they had to do things all over, would they attend University again.

8-year performance items measure outcomes in the following areas:

Credits
This is the number of credits the student has taken while at the University.

Departure Status
This is representation of whether students have dropped out, transferred, are still attending, or graduated.

Degree Completion
This is simply whether a degree has been obtained or not.

GPA
Final grade point average.

In addition to the growth measures and the "Attend all over Again" question, this study uses objective measures of student performance over an 8-year college history period. Data were obtained from the Student Information Records System regarding students' GPA, credits, departure status, and degrees obtained. This data, current as of Summer 1998, is linked by social security number to the student responses in the 1990 Freshman Cohort Study. Thus, altogether there are three linked data sets which collectively measure student pre-college characteristics, freshman year experiences, and 8-year college outcomes.

Factor analyses were used to help group the individual variables into conceptually sound multi-item scales which are then themselves treated as variables. The composition of the multi-item scales is listed in appendix B. The means and standard deviations for the student outcomes analyzed are listed in appendix C. The regression Beta weights and R^2 results from the analysis of student outcomes are listed in appendices D, E, and F. (These are not included here)

Results and Conclusions

Appendices D and E show the beta weights for the OLS regression models for the eight freshman year outcomes measures. In each case the freshman year experiences are more important in explaining the outcomes than are the pre-college characteristics. College experiences are particularly powerful influences on student personal growth, goal clarity, and willingness to attend the institutional all over again.

Appendix F show the beta weights for the four OLS regression models for the eight-year academic outcomes. The freshman year experiences exhibit strong influences on the number of credits, departure status, and degree completion. On the other hand, Cum GPA is almost equally predicted by the pre-college and college variables.

This analysis shows that college experiences are in general far more explanatory than pre-college characteristics in predicting student outcomes. The attached Chart (Appendix G) provides a visual summary of the relative importance of college experiences compared to pre-college characteristics. For 11 of 12 outcomes examined in this study, the college experiences in the aggregate are more influential than the pre-college measures.

Only for predicting cum GPA are pre-college measures in the aggregate superior to the freshman year experience measures. Moreover, there at least five outcomes (#credits, departure status, degree completion, attend the college all over again, and responsibility/self-control) for which the pre-college measures are not very good at all.

There is no instance in which a pre-college characteristic is the most important factor in determining any of the outcomes. It is what happens to students while they are in class, and their relations with faculty, that most influences their intellectual growth, goal clarity, and responsibility & self control. Students who have positive classroom experiences and positive relations with faculty are more likely to experience positive growth both academically and intellectually.

Classroom experiences and faculty relations also mix with student effort and conscientiousness to produce positive outcomes, not only for intellectual and personal growth outcomes but also for GPA and degree completion. Employment, however, appears to interfere with good educational outcomes. It is negatively related to credits, departure status, and degree completion. Employment may be a proxy for financial need and may contribute to an inability of students to focus more completely upon collegiate demands.

Peer relations is important. Growth in interpersonal skills and growth in attitudes of openness & tolerance are highly influenced by students' relationships with their peers. Their willingness to attend this college again also seems to be heavily reliant upon peer relations. Thus, good peer relationships are no doubt important to the overall college experience, but it is the classroom experience and faculty relations that most contribute toward enriching academic experiences.

Except for predicting Cum GPA, the test scores and high school records of these students were not useful predictors of subsequent outcomes. Even their personal and family traits, such as age, sex, race, and parents education failed to be of much predictive value. However, some student pre-college values, such as social concern and ambition, played a small role in predicting freshman year and other college outcomes.

For 11 of the 12 outcomes measured in this study, the strongest predictors are the vitality of student interactions with faculty and with each other during the freshman year, both inside and outside the classroom. While this is a single institution study at a state university that needs to be confirmed by similar studies at other institutions, the results suggest that enrollment managers and others interested in these academic outcomes should give greater attention not only to the freshman year experiences, but also to the academic nature of that experience.

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Appendix B.

Reliability of Scales Used in Multivariate Analyses

Pre-College Scales

		Item/Total Correlation	Alpha if Item Deleted
Academic Diversity	**(Alpha = .74)**		
To gain a broad, liberal arts education and appreciation of ideas.		.51	.65
To learn to think creatively and analytically.		.49	.67
To learn more about myself, my values and my life's goals.		.50	.66
To learn more about other languages and cultures.		.61	.61
Spend a semester or year studying in another country.		.34	.75
Social Concerns	**(Alpha = .79**		
Participating in programs to clean up the environment.		.47	.77
Developing a meaningful philosophy of life.		.43	.78
Helping others who are in difficulty.		.41	.78
Being active in politics.		.39	.79
Influencing social values.		.66	.73
Participating in a community service program.		.68	.73
Helping to promote racial understanding.		.59	.74
Ambitious Goals	**(Alpha = .68)**		
Starting a business of my own or being self-employed.		.30	.68
Being well off financially.		.41	.64
Having a family of my own.		.28	.68
Obtaining recognition from my colleagues.		.52	.60
Having administrative responsibility for the work of others.		.54	.59
Becoming an authority in my field.		.43	.63
Change Likelihood	**(Alpha = .80)**		
Change your major.		.67	-
Change your career choice.		.67	-

College Scales

	Item/Total Correlation	Alpha if Item Deleted
Classroom Experience **(Alpha = .83**		
Been intellectually stimulated by the material covered in a class.	.62	.80
Enjoyed your classes.	.64	.79
I am satisfied with my academic experiences at Albany.	.57	.80
My academic experiences positive influence on intellectual growth.	.62	.80
I am satisfied with the extent of my intellectual development at Albany.	.61	.80
Been in classes where you learned something new.	.60	.80
Few of my courses at Albany have been intellectually stimulating.*	.37	.83
Had faculty who came to class well prepared.	.39	.83
Academic Conscientiousness **(Alpha = .82)**		
I am fairly lazy about keeping up with course assignments.*	.69	.78
In general I exercise good study habits.	.69	.78
During most of the semester, I do very little studying on weekends.*	.61	.79
I generally keep up with my reading assignments for class.	.55	.80
Most of the time at Albany I give higher priority to fun than to studying.*	.52	.81
Generally I put a good deal of effort into being well prepared for examinations.	.47	.81
On weekends I do more studying than partying.	.44	.82
My primary goal at Albany is to take advantage of academic opportunities.	.40	.82
Faculty Concern **(Alpha = .68)**		
Few of the faculty members I had contact with are outstanding teachers.*	.51	-
Few of the faculty members I had contact with are interested in students.*	.51	-
Faculty Relations **(Alpha = .84)**		
Non-classroom interactions w/ faculty positive influence on personal growth.	.79	.76
Non-classroom interactions w/ faculty positive influence on intellectual growth.	.78	.76
Non-classroom interactions w/ faculty positive influence on career goals.	.70	.80
Most faculty interested in helping students in more than academic areas.	.49	.88
Faculty Contact-Academic **(Alpha = .61)**		
Freq. of faculty contact outside of class to discuss your future career.	.37	.58
Freq. of faculty contact outside of class to discuss intellectual matters.	.45	.46
Freq. of faculty contact outside of class to discuss your academic program.	.46	.42
Faculty Contact-Social **(Alpha = .59)**		
Freq. of faculty contact outside of class to help resolve personal problem.	.36	.47
Freq. of faculty contact outside of class to discuss a campus issue or problem.	.40	.28
Freq. of faculty contact outside of class to socialize informally.	.44	.36
Staff Interactions **(Alpha = .86)**		
Freq. of staff contact outside of class to discuss a campus issue or problem.	.82	.70
Freq. of staff contact outside of class to socialize informally.	.72	.78
Freq. of staff contact outside of class to discuss your future career.	.73	.80
Freq. of staff contact outside of class to discuss your academic program.	.53	.84
Peer Relations **(Alpha = .89)**		
I have developed strong friendships with other students.	.75	.87
Interpersonal relationships w/ students positive influence on personal growth.	.54	.88
The student friendships I have developed have been personally satisfying.	.77	.87
It has been difficult for me to meet and make friends with other students.*	.69	.87
I know several Albany students who would help me if personal problem.	.58	.88
Interpersonal relationships w/ students positive influence on intellectual growth.	.62	.88
Met other students who were really interesting.	.69	.87
I am confident in my ability to make friendships.	.59	.88

Outcomes Scales

		Item/Total Correlation	Alpha if Item Deleted
Goal Clarity	**(Alpha = .83)**		
Possessing clear goals.		.62	.81
Developing a clearer idea of my career goals and plans.		.61	.81
Preparing for continued personal and intellectual growth after college.		.62	.81
Building a record of academic achievement that will enhance my future.		.56	.81
Developing the ability to learn on my own.		.51	.82
Gaining knowledge and skills directly applicable to a career.		.53	.82
Preparing for life in a changing world.		.50	.82
Preparing for graduate or professional school study.		.53	.82
Arts & Letters	**(Alpha = .78)**		
Knowing literature of recognized merit.		.66	.72
Placing current problems in historical perspective.		.58	.74
Appreciating artistic & creative expression.		.56	.75
Developing the ability to formulate creative and original ideas and solutions.		.53	.75
Developing intellectual curiosity.		.41	.78
Writing effectively.		.46	.77
Scientific Method	**(Alpha = .76)**		
Developing problem solving skills.		.61	.67
Thinking analytically and logically.		.55	.69
Understanding scientific findings.		.44	.73
Understanding mathematical concepts.		.47	.73
Evaluating ideas, materials, and methods critically.		.53	.70
Disciplinary Study	**(Alpha = .81)**		
Understanding a particular discipline's various schools of thought.		.62	.77
Recognizing general principles in specific events/conditions.		.56	.78
Understanding the inter-relatedness of different fields of study.		.57	.78
Synthesizing a body of information.		.52	.79
Understanding a particular discipline's research methods.		.53	.79
Learning how to learn.		.53	.79
Gaining factual knowledge.		.47	.79
Interpersonal Skills	**(Alpha = .81)**		
Coping with conflict.		.59	.76
Functioning effectively as a member of a team.		.62	.77
Preparing for active participation in a democratic society.		.61	.77
Developing interpersonal and social skills.		.62	.77
Adapting to different social situations.		.52	.79
Speaking effectively.		.46	.80
Openness & Tolerance	**(Alpha = .78)**		
Coping with moral and ethical issues.		.52	.75
Understanding cultural differences.		.58	.73
Developing an openness to new ideas.		.59	.73
Relating well to people of different races.		.61	.72
Developing a better understanding of myself.		.44	.77
Gaining exposure to a variety of new intellectual areas.		.42	.77
Responsibility & Self Control	**(Alpha = .81)**		
Exercising personal responsibility.		.73	.67
Exercising self-discipline.		.66	.74
Functioning independently.		.60	.80

Appendix C.

Means and Standard Deviations For Twelve Outcomes Measures

	Mean	Standard Deviation
Freshman Year		
Goal Clarity	3.05	.74
Attend Albany All Over Again	3.83	1.18
Intellectual Growth		
Arts & Letters	2.84	.74
Scientific Method	2.92	.73
Disciplinary Study	3.07	.66
Personal Growth		
Interpersonal Skills	3.13	.78
Openness & Tolerance	3.42	.69
Responsibility & Self Control	3.74	.88
College History (8 year)		
Credits	102.64	37.66
Departure Status	6.52	2.59
Degree Completion	.71	.46
GPA	2.79	.64

Appendix D.

Regression Beta Weights for Student Self-Reported Growth Measures of 1990 Albany Freshmen Cohort

	Intellectual Growth						Personal Growth					
	Arts & Letters		Scientific Method		Disciplinary Study		Interpersonal Skills		Openness & Tolerance		Responsibility & Self Control	
	Beta	R^2	Beta	R^2	Beta	R^2	Beta	R^2	Beta	R^2	Beta	R^2
Pre-College Variables		.14		.11		.15		.11		.15		.09
Total SAT Score												
High School Ave.											.16	
Diversity									.17			
Social Concerns	.29				.23		.26		.17			
Ambitiousness			.14								.15	
Grad. School Likelihood												
Change Likelihood			-.14									
Science Oriented							-.11					
Age	.11										.11	
Male Gender												
Parent's Education												
Highest Degree Expected												
Freshman Year Variables												
(Increase in R^2=)		.21		.12		.24		.36		.21		.28
Academic Integration												
Classroom Experience	.17		.30		.35				.16		.26	
Conscientiousness											.24	
Faculty Concern											.13	
Faculty Relations	.30		.13		.23		.21		.22			
Faculty Contact-Academic			.12									
Faculty Contact-Social												
Staff Interactions												
Social Integration												
Peer Relations	.16				.13		.41		.27		.18	
Social Involvement							.16				.17	
Extra-Curricular Activities			.13				.11					
Employment											.12	
Total R^2:		.35		.23		.39		.47		.36		.37

Appendix E.

Regression Beta Weights for Freshman Year Summary Outcomes of 1990 Albany Freshmen Cohort

	Freshman Year			
	Goal Clarity		Attend Albany All Over Again	
	Beta	R^2	Beta	R^2
Pre-College Variables		.14		.00
Total SAT Score				
High School Ave.				
Diversity				
Social Concerns	.14			
Ambitiousness	.15			
Grad. School Likelihood				
Change Likelihood				
Science Oriented				
Age				
Male Gender			.14	
Parent's Education				
Highest Degree Expected				
Freshman Year Variables				
(Increase in R^2=)		.32		.21
Academic Integration				
Classroom Experience	.24		.21	
Conscientiousness	.13			
Faculty Concern				
Faculty Relations	.31			
Faculty Contact-Academic				
Faculty Contact-Social				
Staff Interactions				
Social Integration				
Peer Relations	.13		.35	
Social Involvement	.13			
Extra-Curricular Activities				
Employment				
Total R^2:		.46		.21

Appendix F.

Regression Beta Weights for Final Academic Outcomes Measures of 1990 Albany Freshmen Cohort

(Including Freshman Year Outcomes in the Regression)

	College History (8 year)							
	Credits[1]		Departure Status[2]		Degree Completion[3]		GPA[4]	
	Beta	R^2	Beta	R^2	Beta	R^2	Beta	R^2
Pre-College Variables		.01		.03		.01		.18
Total SAT Score							.23	
High School Ave.							.23	
Diversity								
Social Concerns			-.13					
Ambitiousness								
Grad. School Likelihood								
Change Likelihood			.13				.18	
Science Oriented							-.12	
Age								
Male Gender								
Parent's Education								
Highest Degree Expected							.	
Freshman Year Variables								
(Increase in R^2=)		.14		.17		.14		.16
Academic Integration								
Classroom Experience	.16							
Conscientiousness			.21		.16		.40	
Faculty Concern								
Faculty Relations								
Faculty Contact-Academic								
Faculty Contact-Social								
Staff Interactions								
Social Integration								
Peer Relations			-.15					
Social Involvement								
Extra-Curricular Activities					.15			
Employment	-.14		-.19		-.13			
Freshman Year Outcomes								
Freshman Overall Growth			.24				.16	
Attend Albany All Over Again	.28		.26		.30			
Total R^2:		.15		.20		.15		.34

Notes: (Data as of Summer 1998)

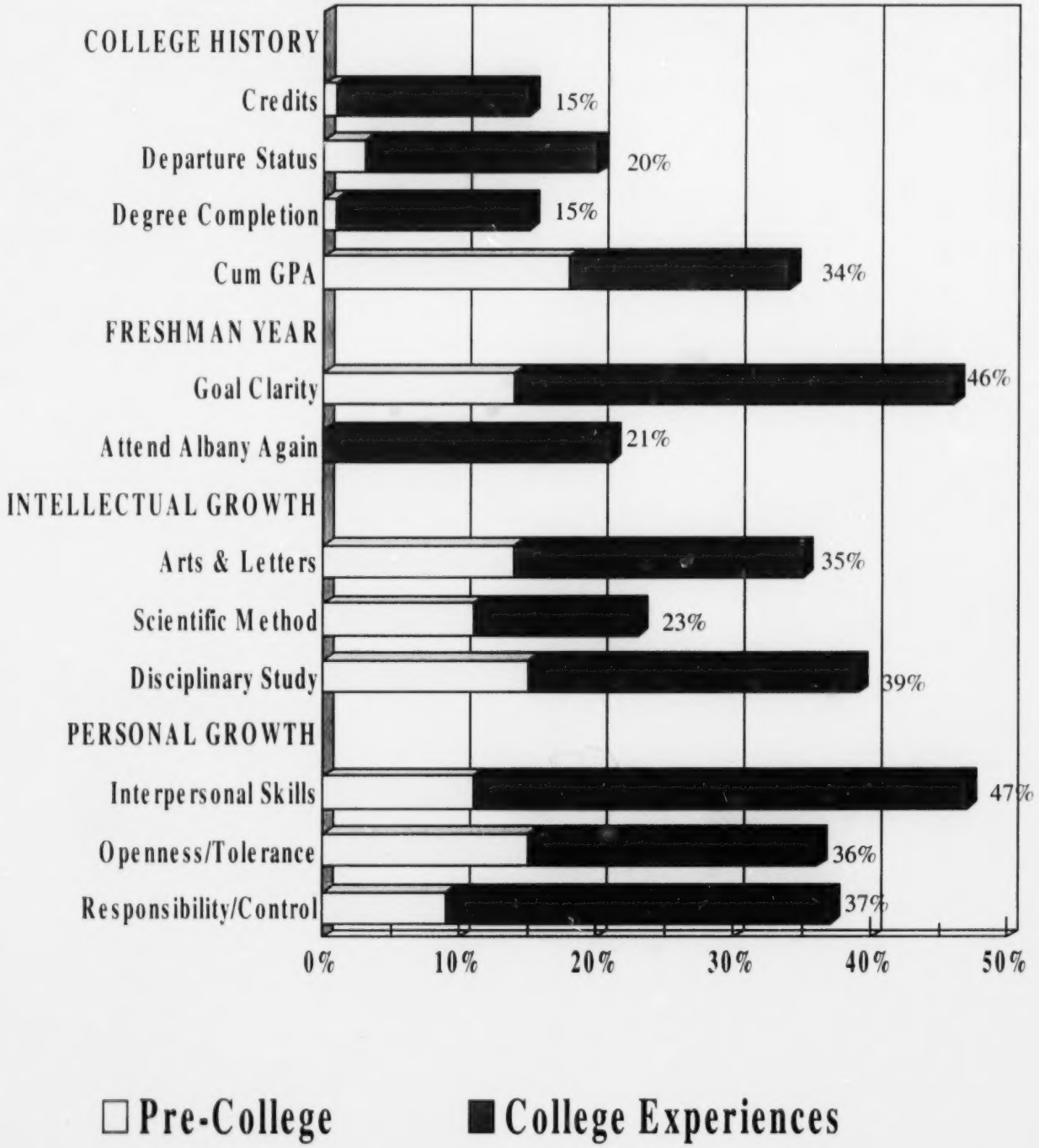
1. Total number of credits completed at Albany.
2. 8-point scale:
   - drop out with low GPA = 1
   - drop out with medium GPA = 3
   - drop out with high GPA = 5
   - still in U Albany = 7
   - transfer with low GPA = 2
   - transfer with medium GPA = 4
   - transfer with high GPA = 6
   - graduated = 8.
3. Graduated from U. Albany.
4. Final grade point average (4.0 scale).

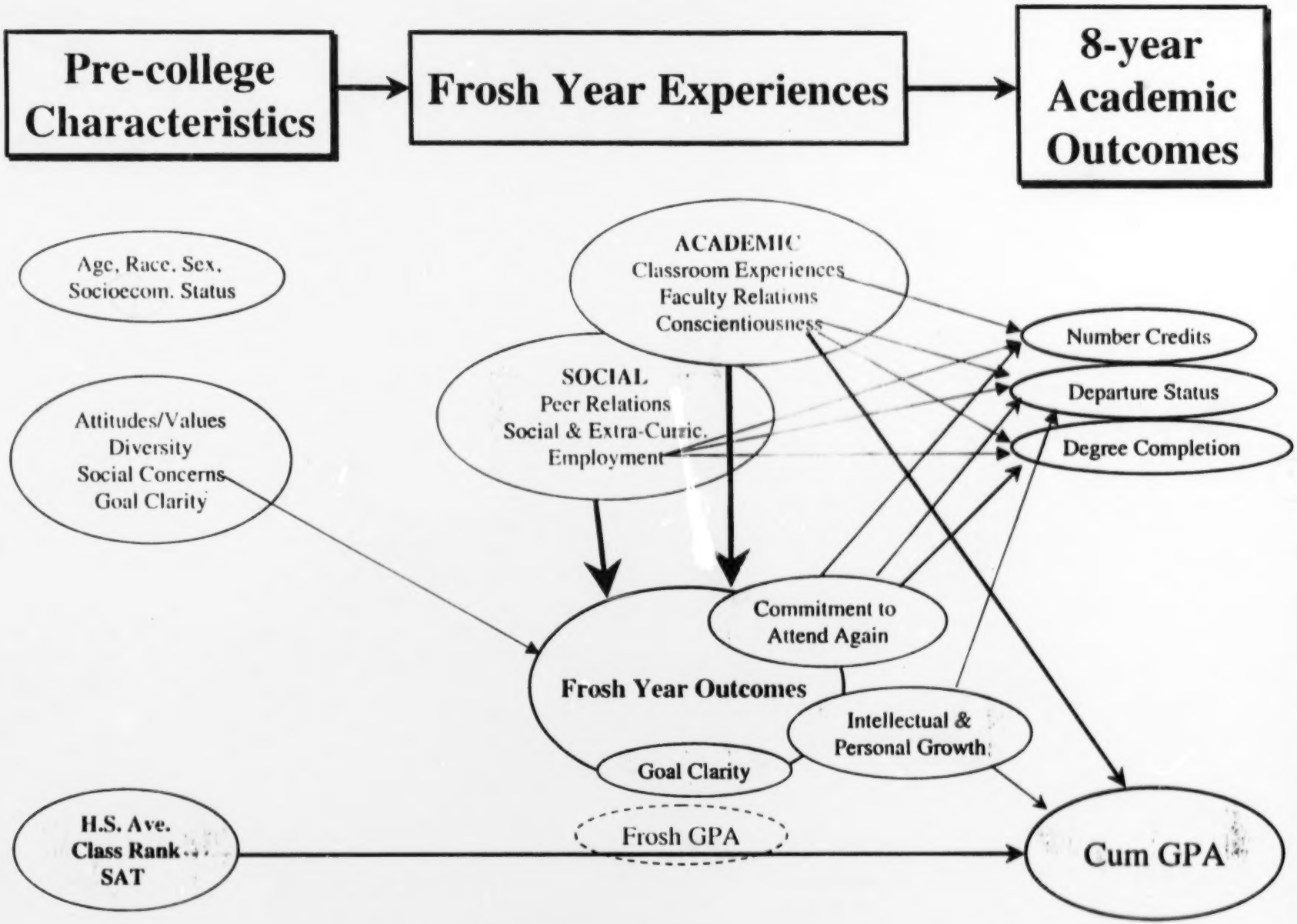
Appendix G.

1990 Freshmen Cohort Outcomes Measures:

The Percent of Variance Explained by the Measures of

Pre-College Characteristics and College Experiences





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